

IN THE SPECIFICATION:

Please replace the paragraph beginning on page 3, line 18, with the following amended paragraph:

Accordingly, an object of the present ~~invention~~ invention is to overcome the above conventional drawbacks and provide an alkaline developing solution and a plate making method which can exhibit a certain performance, even if components of an image recording layer dissolve into the developing solution in course of processing, and make possible that a highly sharp and clear image is formed without damages to the formed image areas.

Please replace the paragraph beginning on page 7, line 26 and ending on page 8, line 5, with the following amended paragraph:

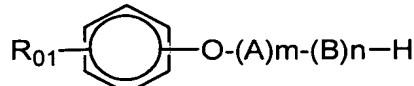
In the formula (I), the alkyl group or alkenyl group represented by R may be in the [[from]] ~~form of a linear [[of]] or~~ branched chain, and the alkyl group, alkyenyl group or aryl group may have a substituent, said substituent including an alkyl group having carbon atoms of from 1 to 20, a halogen atom, an aryl group having carbon atoms of from 6 to 15, an aralkyl group having carbon atoms of from 7 to 17, an alkoxy group having carbon atoms of from 1 to 20, an alkoxy-carbonyl group having carbon atoms of from 2 to 20, an acyl group having carbon atoms of from 2 to 15 and the like.

Please replace the paragraph beginning on page 8, line 13, and ending on page 9, line 4, with the following amended paragraph:

Specific examples of the linear-type alkyleneoxide adduct represented by the formula (I) are those represented by the following formulas formulas 1 to 6.

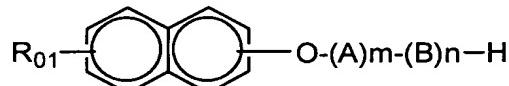


4



(wherein R₀₁ represents a hydrogen atom or an alkyl group having carbon atoms of from 1 to 20 which may be in the form of linear or branched chain.)

5



(wherein R₀₁ represents a hydrogen atom or an alkyl group having carbon atoms of from 1 to 20 which may be in the form of linear or branched chain.)

6



(wherein R₀₁ represents a hydrogen atom or an alkyl group having carbon atoms of from 1 to 20 which may be in the form of linear or branched chain.)

Please replace the paragraph beginning on page 11, line 3, with the following amended paragraph:

More specifically, examples of the branched-type alkyleneoxide adduct used in the present invention are the compound represented by the following following formula (III), (IV) or (IV').

Please replace the paragraph beginning on page 13, last line, and ending on page 14, line 18, with the following amended paragraph:

Anionic surfactants which can be used in the present invention preferably include fatty alcohol sulfuric ester salts such as sodium lauryl alcohol sulfate, ammonium lauryl alcohol sulfate and sodium octyl alcohol sulfate, higher alkyl ether sulfate salts, aryl ether sulfate salts, alkyl aryl sulfonate salts such as sodium isopropyl naphthalene sulfonate, sodium isobutyl naphthalene sulfonate, sodium dodecyl benzene sulfonate and sodium ~~methanitro~~ metanitro benzene sulfonate, sulfuric esters of fatty alcohol having carbon atoms of from 8 to 22 such as sodium secondary alcohol sulfate, aliphatic alcohol phosphoric ester salts such as sodium cetyl alcohol phosphate, alkyl amide sulfonate salts such as C₁₇H₃₃CON(CH₃)CH₂CH₂SO₃Na, sulfonate salts of bibasic aliphatic ester such as dioctyl sodium sulfosuccinate and dihexyl sodium sulfosuccinate, hydroxyalkane sulfonate salts, alkane sulfonate salts, alkyl diphenylether sulfonate salts, diphenylether disulfonate salts, dialkyl sulfosuccinate salts, olefin sulfonate salts, linear alkyl benzene sulfonate salts, branched alkyl benzene sulfonate salts, alkyl naphthalene sulfonate salts, alkyl phenoxy polyoxyethylene propyl ~~sulfonate~~ sulfonate salts, polyoxyethylene alkyl sulfophenylether salts, disodium N-alkyl sulfosuccinate monoamide, petroleum sulfonates, and the like.

Please replace the paragraph beginning on page 27, line 12, with the following amended paragraph:

Preferably used as the dye herein also include, for instance, sensitizing agents capable of absorbing near infrared rays disclosed in U.S. Patent No. 5,156,938; substituted arylbenzo (thio) pyrylium salts disclosed in U.S. Patent No. 3,881,924; trimethine thiopyrylium salts disclosed in Japanese Un-Examined Patent Publication No. Sho 57-142645 (U.S. Patent No. 4,327,169); pyrylium compounds disclosed in Japanese Un-Examined Patent Publication Nos. Sho 58-181051, Sho 58-220143, Sho 59-41363, Sho 59-84248, Sho 59-84249, Sho 59-146063 and 59-146061; cyanine dyes disclosed in Japanese Un-Examined Patent Publication No. Sho 59-216146; pentamethine thiopyrium salts disclosed in U.S. Patent No. 4,283,475; pyrilium pyrylium compounds disclosed in Japanese Examined Patent Publication Nos. Hei 5-13514 and Hei 5-19702; and commercially available ones such as Epolight III-178, Epolight III-130, Epolight III-125 and like (available from Epoline Company).

Please replace the paragraph beginning on page 34, line 17, with the following amended paragraph:

The alkali-soluble polymer for use in the present invention is preferably those having a phenolic hydroxyl group, from the aspect of superiority thereof in image-forming image-forming ability by light-exposure on an infrared laser and the like. Said polymer includes preferably novolak resins such as phenol - formaldehyde resin, m-cresol - formaldehyde resin, p-cresol - formaldehyde resin, (mixture of m-cresol and

p-cresol) - formaldehyde resin, and mixture of phenol and cresol (m-cresol and/or p-cresol) - formaldehyde resin; and pyrogallolacetone resins.

Please replace the paragraph beginning on page 41, line 7, with the following amended paragraph:

Commercially available monomers include a hydroxyl-terminated polyalkylene glycol mono(meth)acrylate manufactured by Nippon Yushi Co., Ltd. such as Blenmer PE-90, Blenmer PE-200, Blenmer PE-350, Blenmer AE-90, Blenmer AE-200, Blenmer AE-400, Blenmer PP-1000, Blenmer PP-500, Blenmer PP-800, Blenmer AP-150, ~~blenmer~~ Blenmer AP-400, Blenmer AP-550, Blenmer AP-800, Blenmer 50PEP-300, Blenmer 70PEP-350B, Blenmer AEP Series, Blenmer 55PET-400, Blenmer 30PET-800, Blenmer 55PET-800, Blenmer AET Series, Blenmer 30PPT-800, Blenmer 50PPT-800, Blenmer 70PPT-800, Blenmer APT Series, Blenmer 10PPB-500B, Blenmer 10APB-500B and the like. Similarly, there are an alkyl-terminated polyalkylene glycol mono(meth)acrylate manufactured by Nippon Yushi Co., Ltd. such as Blenmer PME-100, Blenmer PME-200, Blenmer PME-400, Blenmer PME-1000, Blenmer PME-4000, Blenmer AME-400, Blenmer 50POEP-800B, Blenmer 50AOEP-800B, Blenmer PLE-200, Blenmer ALE-200, Blenmer ALE-800, Blenmer PSE-400, Blenmer PSE-1300, Blenmer ASE Series, Blenmer PKEP Series, Blenmer AKEP Series, Blenmer ANE-300, Blenmer ANE-1300, Blenmer PNEP Series, Blenmer PNPE Series, Blenmer 43 ANEP-500, Blenmer 70ANEP-550, and products manufactured by Kyoei Chemicals Co., Ltd. such as Light Ester MC, Light Ester 130MA, Light Esters 041MA, Light Acrylate BO-A, Light Acrylate EC-A, Light Acrylate MTG-A, Light Acrylate 130A, Light Acrylate DPM-A, Light Acrylate P-200A, Light Acrylate NP-4EA, Light Acrylate NP-8EA and the like.

Please replace the paragraph beginning on page 46, line 24, with the following amended paragraph:

The quaternary ammonium salts are not particularly limited, but include tetraalkyl ammonium salt, trialkylaryl trialkylauryl ammonium salt, dialkyldiaryl ammonium salt, alkyltriaryl ammonium salt, tetraaryl ammonium salt, cyclic ammonium salt, and bicyclic ammonium salt.

Please replace the paragraph beginning on page 57 line 10, with the following amended paragraph:

To more effectively inhibit the alkali-soluble polymer from dissolving in the developing solution, and at the same time, to impart the increased scratch resistance to the surface portion of the image recording layer, it is preferable that the image ~~recording~~ recording layer further comprise polymers including a (meth)acrylate monomer having two or three perfluoroalkyl groups with 3 to 20 carbon atoms in the molecule thereof, as described in JP KOKAI No. 2000-187318. Such a polymer may be contained in an amount of 0.1 to 10% by weight, more preferably 0.5 to 5% by weight of the total weight of materials for the image recording layer.

Please replace the paragraph beginning on page 71, line 2, with the following amended paragraph:

SiO_2 -containing alkaline developing solutions were prepared as follows. Diverse compounds A~H and a~v and shown below, each was added at various concentrations summarized in the following Table 1 to one liter of an aqueous solution comprising 4.0% by weight of potassium silicate whose molar ratio of

$\text{SiO}_2/\text{K}_2\text{O}$ was 1.1 to obtain developing solutions (1) to (30). For comparison, either of the branched-type alkyleneoxide adduct and the linear-type alkyleneoxide adduct was added to the above aqueous solution to prepare developing solutions (61) and (62), respectively. ~~Further~~ Further, the above aqueous solution comprising 4.0% by weight of potassium salt whose molar ratio of $\text{SiO}_2/\text{K}_2\text{O}$ was 1.1 was referred to as developing solution (63).

Please replace the paragraph beginning on page 79, line 4, and ending on page 80, line 1, with the following amended paragraph:

To a 20 ml volume three-necked flask equipped with a stirring machine, a cooling tube and a dropping funnel, there were added 6.39 g (0.045 mole) of n-propyl methacrylate, 1.29 g (0.015 mole) of methacrylic acid and 20 g of 1-methoxy-2-propanol and then the resulting mixture was stirred while heating it at 65°C in a hot water bath. To this mixture, there was added 0.15 g of "V-601" (available from WAKO Pure Chemical Co., Ltd.) and then the mixture was stirred in a nitrogen gas stream for 2 hours while retaining the same at 70°C. To this reaction mixture, there was further dropwise added a mixture comprising 6.39 g (0.045 mole) of n-propyl methacrylate, 1.29 g (0.015 mole) of methacrylic acid, 20 g of 1-methoxy-2-propanol and 0.15 of "V-601" through a dropping funnel over 2 hours. After the dropwise addition of the mixture, ~~[[thre]]~~ the resulting mixture was additionally stirred at 90°C for 2 hours. After the completion of the reaction, 40 g of methanol was added to the reaction mixture, followed by cooling the mixture, introduction of the resulting mixture into 2 L of water while stirring the water, stirring the mixture over 30 minutes, filtration of the reaction mixture to remove precipitates thus formed, and then drying the precipitates to give 15 g of a white solid. The weight-average molecular

weight (polystyrene (polystyrene standard) of the copolymer was determined by the gel permeation chromatography and it was found to be 53,000.

Please replace the paragraph beginning on page 80, line 5, with the following amended paragraph:

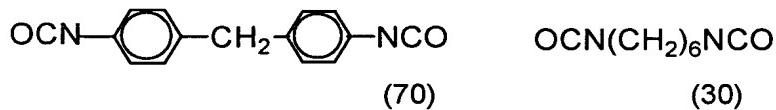
According to the same procedure as in Synthesis Example 1, ethyl methacrylate/isobutyl methacrylate/methacrylic acid (mole%: 35/35/30) were used to synthesize a copolymer. The weight-average molecular weight (polystyrene (polystyrene standard) of the copolymer was determined by the gel permeation chromatography and it was found to be 50,000.

Please replace the paragraph beginning on page 80, last line, and ending on page 81, line 3, with the following amended paragraph:

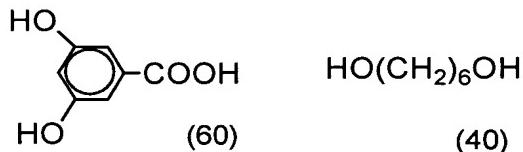
The weight-average molecular weight (polystyrene (polystyrene standard) of the polymer was determined by the gel permeation chromatography and it was found to be 70,000. The content of ~~carboxyl~~ carboxyl groups in the polymer was determined by titration and it was found to be 1.43 meq/g.

Please replace the paragraph beginning on page 81, line 7, with the following amended paragraph:

According to the same procedure as in Synthesis Example 3, the following diisocyanate compounds (mole %):



and the following diol compounds (mole %):



were used to synthesize a copolymer. The content of acids in the polymer was found to be 1.72 meq/g, and the weight-average molecular weight (polystyrene (polystyrene standard) of the copolymer was found to be 80,000.

Please replace the paragraph beginning on page 83, line 12, and ending on page 84, line 2, with the following amended paragraph:

<Coating solution of Image recording Layer>

Copolymer of Synthesis Example 2	0.050g
Copolymer of Synthesis Example 4	0.050g
Copolymer of Synthesis Example 5	0.4g
M,p-cresol novolac (m/p ratio=6/4, weight-average molecular weight of 8,000, comprising 0.5% by weight of unreacted cresol)	0.6g
Cyanine dye A	0.1g
Phthalic anhydride	0.05g
P-toluene sulfonic acid	0.002g
Ethylviolet	0.02g

(counter ion: 6-hydroxy- β -naphthalene sulfonic acid)

Esterified product of 1,2-diazonaphthoquinone-5- 0.01g

sulfonyl chloride and pyrogallol/acetone resin

Fluorine atom-containing surfactant 0.05g

(trade name of ~~Megafac~~ F-177 manufacture Megaface F-177 manufactured by
Dainippon Ink and Chemicals, Inc.)

Methyl ethyl ketone 8g

1-Methoxy-2-propanol 4g

Please replace Table 3 on page 86 with the following amended Table 3:

Table 3

Example No.	SiO ₂ - containing containing Developing Solution No.	Development of Non-Image Area						
		Immediately after start	Throughput (m ²)					
			50	100	200	300	400	500
1	(1)	○	○	○	○	○	○	○
2	(2)	○	○	○	○	○	○	○
3	(3)	○	○	○	○	○	○	○
4	(4)	○	○	○	○	○	○	○
5	(5)	○	○	○	○	○	○	○
6	(6)	○	○	○	○	○	○	○
7	(7)	○	○	○	○	○	○	○
8	(8)	○	○	○	○	○	○	○
9	(9)	○	○	○	○	○	○	○
10	(10)	○	○	○	○	○	○	○
11	(11)	○	○	○	○	○	○	○
12	(12)	○	○	○	○	○	○	○
13	(13)	○	○	○	○	○	○	○
14	(14)	○	○	○	○	○	○	○
15	(15)	○	○	○	○	○	○	○
16	(16)	○	○	○	○	○	○	○
17	(17)	○	○	○	○	○	○	○
18	(18)	○	○	○	○	○	○	○
19	(19)	○	○	○	○	○	○	○
20	(20)	○	○	○	○	○	○	○
21	(21)	○	○	○	○	○	○	○
22	(22)	○	○	○	○	○	○	○
23	(23)	○	○	○	○	○	○	○
24	(24)	○	○	○	○	○	○	○

25	(25)	o	o	o	o	o	o	o
26	(26)	o	o	o	o	o	o	o
27	(27)	o	o	o	o	o	o	o
28	(28)	o	o	o	o	o	o	o
29	(29)	o	o	o	o	o	o	o
30	(30)	o	o	o	o	o	o	o
Comparative Ex.1	(61)	o	o	o	Δ	Δ	x	x
Comparative Ex.2	(62)	o	o	o	Δ	Δ	x	x
Comparative Ex.3	(63)	o	o	o	o	o	o	o

Please replace the paragraph beginning on page 90, line 19, and ending on page 91, last line, with the following amended paragraph:

<Photosensitive Solution 2>

Copolymer of Synthesis Example 2 0.050g

Copolymer of Synthesis Example 4 0.050g

N-(4-Aminosulfonylphenyl)methacrylamide/

N-(4-Aminosulfonylphenyl)methacrylamide/

acrylonitrile/methyl methacrylate 1.896g

(36/34/30, weight-average molecular weight of 50,000)

Cresol novolac 0.237g

(m/p ratio=6/4, weight-average molecular weight of 4,500,

comprising 0.8% by weight of unreacted monomer)

Cyanine dye A 0.109g

4,4'-Bishydroxyphenylsulfone 0.063g

Tetrahydrophthalic anhydride 0.190g

P-toluene sulfonic acid 0.008g

Ethylviolet	0.05g
(counter ion: 6-hydroxy-β-naphthalene sulfonic acid)	
Fluorine atom-containing surfactant	0.035g
(trade name of F-176 manufactured by	
Dainippon Ink and Chemicals, Inc.)	
Methyl ethyl ketone	26.6g
1-Methoxy-2-propanol	13.6g
γ-butyrolactone	13.8g
<Photosensitive Solution 3>	
Copolymer of Synthesis Example 2	0.050g
Copolymer of Synthesis Example 4	0.050g
Cresol novolac	0.237g
(m/p ratio=6/4, weight-average molecular weight of 4,500, comprising 0.8% by weight of unreacted monomer)	
Cyanine dye A	0.047g
Dodecyl stearate	0.060g
3-Methoxy-4-diazodiphenylamine hexafluorophosphate	0.030g
Fluorine atom-containing surfactant	0.110g
(trade name of F-176 (20% solution) manufactured by	
Dainippon Ink and Chemicals, Inc.)	
Fluorine atom-containing surfactant	0.12g
(trade name of MCF312F (30% solution) manufactured by	
Dainippon Ink and Chemicals, Inc.)	
Methyl ethyl ketone	15.1g
1-Methoxy-2-propanol	7.7g

Please replace the paragraph beginning on page 92, line 13, with the following amended paragraph:

The lithographic printing ~~paltes~~ plates thus obtained were evaluated in the same manner as described in Examples 1 to 60. The results are shown in Tables 7 and 8 for development of non-image areas, and in Tables 9 and 10 for impairment of image areas.

Please replace Table 7 on page 93 with the following amended Table 7:

Table 7

Example No.	SiO ₂ - containing <ins>containing</ins> Developing Solution No.	Immediately after start	Development of Non-Image Area					
			Throughput (m ²)					
			50	100	200	300	400	500
61	(1)	o	o	o	o	o	o	o
62	(2)	o	o	o	o	o	o	o
63	(3)	o	o	o	o	o	o	o
64	(4)	o	o	o	o	o	o	o
65	(5)	o	o	o	o	o	o	o
66	(6)	o	o	o	o	o	o	o
67	(7)	o	o	o	o	o	o	o
68	(8)	o	o	o	o	o	o	o
69	(9)	o	o	o	o	o	o	o
70	(10)	o	o	o	o	o	o	o
71	(11)	o	o	o	o	o	o	o
72	(12)	o	o	o	o	o	o	o
73	(13)	o	o	o	o	o	o	o
74	(14)	o	o	o	o	o	o	o
75	(15)	o	o	o	o	o	o	o
76	(16)	o	o	o	o	o	o	o
77	(17)	o	o	o	o	o	o	o
78	(18)	o	o	o	o	o	o	o
79	(19)	o	o	o	o	o	o	o
80	(20)	o	o	o	o	o	o	o
81	(21)	o	o	o	o	o	o	o
82	(22)	o	o	o	o	o	o	o
83	(23)	o	o	o	o	o	o	o
84	(24)	o	o	o	o	o	o	o
85	(25)	o	o	o	o	o	o	o
86	(26)	o	o	o	o	o	o	o

87	(27)	o	o	o	o	o	o	o
88	(28)	o	o	o	o	o	o	o
89	(29)	o	o	o	o	o	o	o
90	(30)	o	o	o	o	o	o	o
Comparative Ex.7	(61)	o	o	o	Δ	Δ	Δ	
Comparative Ex.8	(62)	o	o	o	Δ	Δ	Δ	
Comparative Ex.9	(63)	o	o	o	o	o	o	

Please replace Table 9 on page 95 with the following amended Table 9:

Table 9

Example No.	SiO ₂ -containing developing solution No.	Impairment of Image Area						
		Immediately after start	Throughput (m ²)					
			50	100	200	300	400	500
61	(1)	o	o	o	o	o	o	o
62	(2)	o	o	o	o	o	o	o
63	(3)	o	o	o	o	o	o	o
64	(4)	o	o	o	o	o	o	o
65	(5)	o	o	o	o	o	o	o
66	(6)	o	o	o	o	o	o	o
67	(7)	o	o	o	o	o	o	o
68	(8)	o	o	o	o	o	o	o
69	(9)	o	o	o	o	o	o	o
70	(10)	o	o	o	o	o	o	o
71	(11)	o	o	o	o	o	o	o
72	(12)	o	o	o	o	o	o	o
73	(13)	o	o	o	o	o	o	o
74	(14)	o	o	o	o	o	o	o
75	(15)	o	o	o	o	o	o	o
76	(16)	o	o	o	o	o	o	o
77	(17)	o	o	o	o	o	o	o
78	(18)	o	o	o	o	o	o	o
79	(19)	o	o	o	o	o	o	o
80	(20)	o	o	o	o	o	o	o
81	(21)	o	o	o	o	o	o	o
82	(22)	o	o	o	o	o	o	o
83	(23)	o	o	o	o	o	o	o
84	(24)	o	o	o	o	o	o	o
85	(25)	o	o	o	o	o	o	o
86	(26)	o	o	o	o	o	o	o

87	(27)	o	o	o	o	o	o	o
88	(28)	o	o	o	o	o	o	o
89	(29)	o	o	o	o	o	o	o
90	(30)	o	o	o	o	o	o	o
Comparative Ex.7	(61)	o	Δ	Δ	×	×	×	×
Comparative Ex.8	(62)	o	Δ	Δ	×	×	×	×
Comparative Ex.9	(63)	×	×	×	×	×	×	×

Please replace the paragraph beginning on page 97, line 1, with the following amended paragraph:

The alkaline developing solution according to the present invention can exhibit exhibit a certain performance, even if components of an image recording layer dissolve into the developing solution. Therefore, the alkaline developing solution according to the present invention makes possible to process stably a lithographic printing plate precursor in extended periods of time. The plate making method using the above developing solution can form a highly sharp and clear image in a lithographic printing plate without damages to the image areas, simultaneously favorable developing performance to the non-image areas being retained.